

### **REMARKS**

In this Amendment, Applicant has amended Claim 1 to further specify different embodiments of the present invention and overcome the rejection. It is respectfully submitted that no new matter has been introduced by the amended claim. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

#### **REJECTIONS UNDER 35 U.S.C. §103:**

Claim 1 has been rejected under 35 U.S.C. §103 as allegedly being unpatentable over the alleged applicant's admitted prior art (AAPA) in view of Kimura (US 5,602,559); Claim 3 has been rejected under 35 U.S.C. §103 as allegedly being unpatentable over AAPA in view of Kimura, and further in view of Chen (US 2003/0080931).

Applicant traverses the rejection and respectfully submits that the embodiments of present-claimed invention are not obvious over the cited prior art references. More specifically, Claim 1 has been amended to define a method of driving a vertically aligned liquid crystal display with a large light output while suppressing disclination, as discussed on page 10, lines 8 – 16 of the specification. For the Examiner's reference, as illustrated with a dotted line in the attached illustrative drawing based on Fig. 10, when a pulse is applied to a liquid crystal for each of a plurality of subfields of one field, output light is gained but lowered for each display-off period, then increasing up to the subfield B'5 and reaching the saturated (white) level.

For the Examiner's reference, another attached illustrative drawing based on Fig. 14 illustrates output light gained for the subfield B'5, as described on page 20, lines 10 – 13. A response time (the claimed given period) is about 3.46 ms for the liquid crystal in this embodiment. The response time is a period for which output light that once reached the saturated (white) level SL lowers to the black level  $V_{th}$ , as illustrated with a dotted

line extended from the curve “r”. This is not applied to the curve “s” which does not reach the saturated (white) level.

As discussed on page 10, lines 8 – 16, the present invention suppresses disclination with a wide pulse width (the claimed second subfield and longer than the response time) divided into a plurality of small widths (the claimed display-on and off periods).

In CASE 1 (TABLE 2) on page 11, line 7 to page 12, line 5, one field is divided into a plurality of subfields B’0 to B’5 including at least a first subfield B’0 and a second subfield B’4 or B’5. The subfields B’4 and B’5 longer than the response time of 3.46 ms have a plurality of pulses with a plurality of display-on and –off periods. The same is also applied to CASEs 2 to 5.

As amended and based on CASEs 1 to 5, the present invention has several features as listed below”

- (1) One field is divided into at least a first subfield and a second subfield. The first subfield is shorter than a given period for which an output light of a liquid crystal varies from a white level that is a saturated level, to a black level. The second subfield is longer than the given period.
- (2) The first subfield has one display-off period for which the liquid crystal is not driven and one display-on period for which the liquid crystal is driven. The second subfield has a plurality of display-off periods for which the liquid crystal is not driven and a plurality of display-on periods for which the liquid crystal is driven.
- (3) Each display-off period of the second subfield is shorter than the given period. The display-off period of the first subfield is equal to each display-off period of the second subfield.
- (4) The ratio of the total of the display-on periods of the first and second subfields to the one field is in the range from 1:6 to 5:6.

The combination of AAPA and Kimura could not have reached the above features at the time of the invention. Therefore, the further amended claim is not obvious over AAPA in view of Kimura or further in view of Chen.

Furthermore, although the Examiner did not refer to previously cited Hudson et al. reference, it is respectfully submitted that Hudson discusses in its paragraph [0016] that a trade-off between modulation efficiency and lateral field defects (synonym with disclination). In contrast, the present invention achieves increase in modulation efficiency (or light output) while suppressing disclination with the features discussion above.

Therefore, the rejection under 35 U.S.C. §103 has been overcome. Accordingly, withdrawal of the rejections under 35 U.S.C. §103 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

JACOBSON HOLMAN PLLC

Date: January 12, 2007  
(202) 638-6666  
400 Seventh Street, N.W.  
Washington, D.C. 20004  
Atty. Dkt. No.: P69141US0

By

  
John C. Holman  
Registration No. 22,769

Enclosure:

Illustrative Drawings